

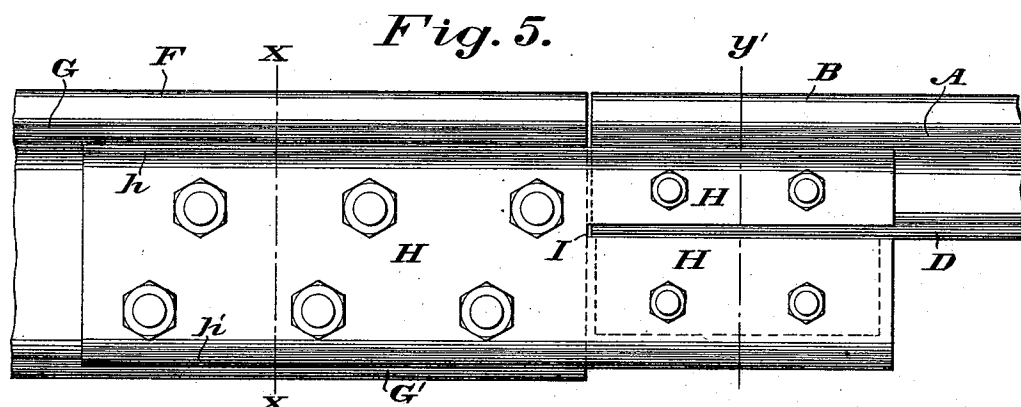
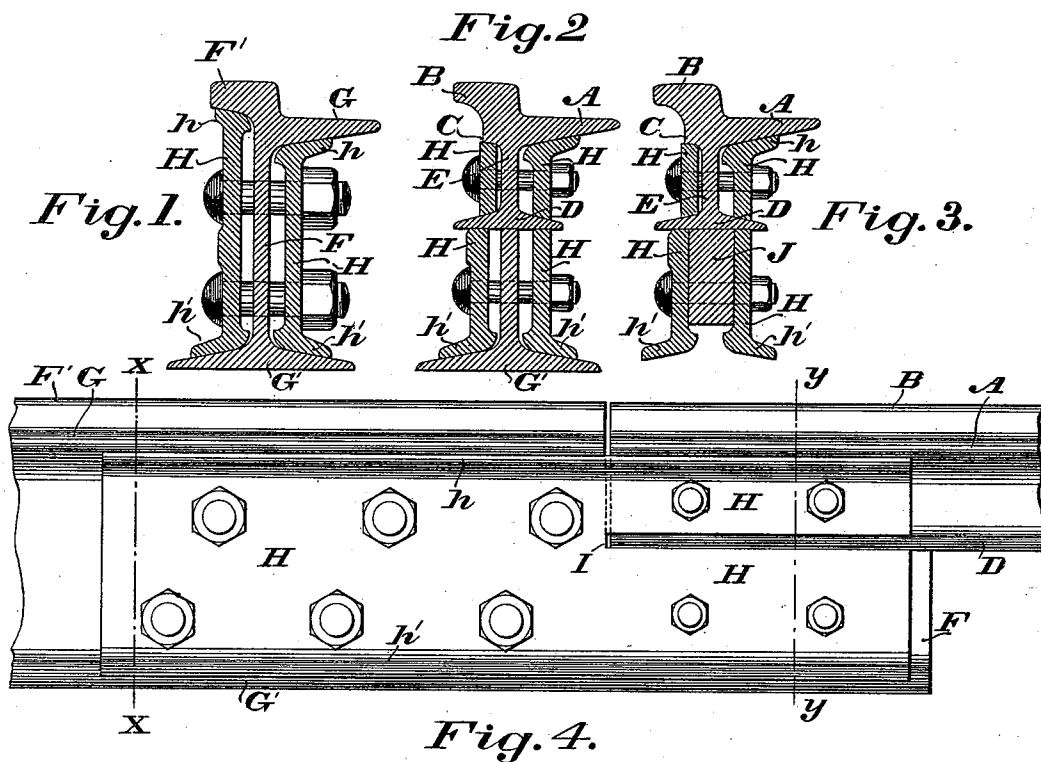
(No Model.)

2 Sheets—Sheet 1.

A. J. MOXHAM.
RAIL JOINT.

No. 505,990.

Patented Oct. 3, 1893.



WITNESSES:

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(No Model.)

2 Sheets—Sheet 2.

A. J. MOXHAM.
RAIL JOINT.

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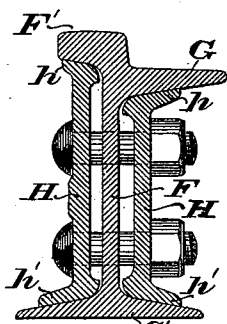


Fig. 6.

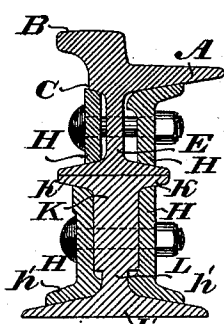


Fig. 7.



Fig. 8.

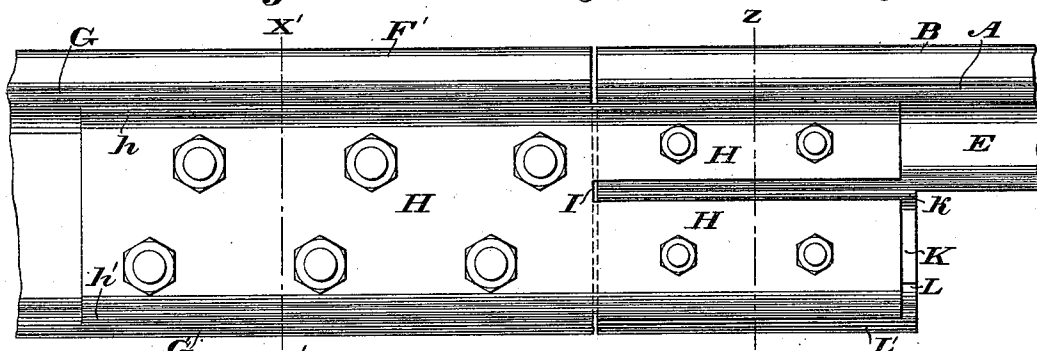


Fig. 9.

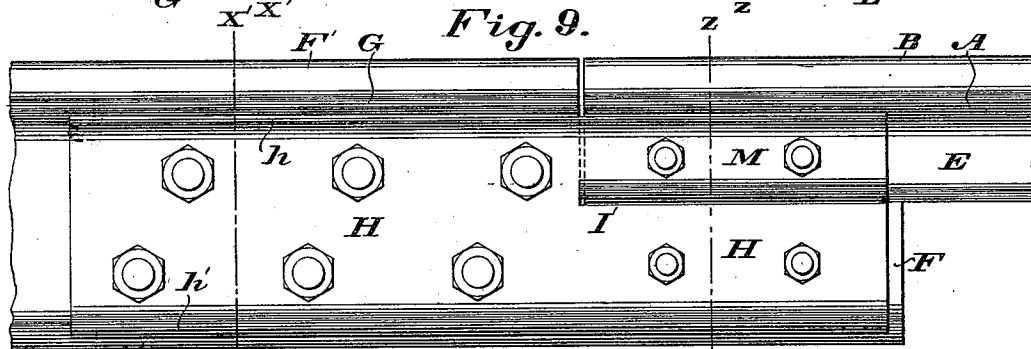


Fig. 10.

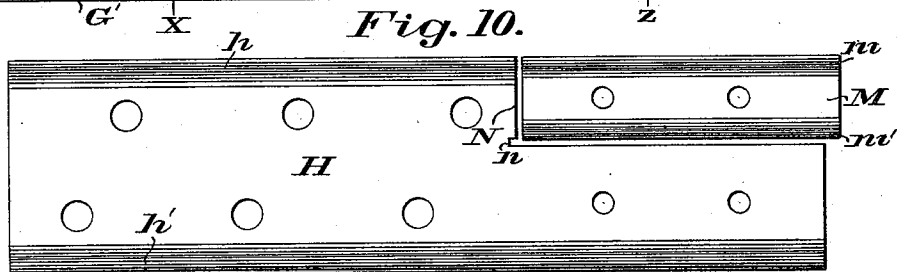


Fig. 11.

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UNITED STATES PATENT OFFICE.

ARTHUR J. MOXHAM, OF JOHNSTOWN, PENNSYLVANIA.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 505,990, dated October 3, 1893.

Application filed September 10, 1892. Serial No. 445,577. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. MOXHAM, of Johnstown, Pennsylvania, have invented a new and Improved Rail-Joint, of which the following is a specification.

This invention relates to rail-joints and has especial reference to rail-joints for street car tracks.

The object of the invention is to provide a rail joint by means of which a low rail may be joined to a high rail.

It has been found desirable to use in connection with low street car rails already laid, high rails of the girder type. To connect such high and low rails a joint has been provided constructed and arranged as follows:

In the accompanying drawings in which similar letters of reference indicate like parts, Figure 1 is a vertical cross section of a rail joint constructed in accordance with this invention, taken on the line $x-x$ Figs. 4 and 5, looking to the right. Fig. 2 is a vertical cross section taken on the line $y-y$, Fig. 4, looking to the right. Fig. 3 is a vertical cross section of a modification of the invention taken on the line $y'-y'$, Fig. 5. Fig. 4 is a side view of the rail joint. Fig. 5 is a side view of a modification of the invention. Fig. 6 is a vertical cross section of modifications taken on the line $x'-x'$ of Figs. 9 and 10. Fig. 7 is a vertical cross section of a modification taken on the line $z-z$, Fig. 9. Fig. 8 is a vertical cross section of a modification taken on the line $z'-z'$, Fig. 10. Figs. 9 and 10 are side views of other modifications, and Fig. 11 is a detail view of a splice bar in Fig. 10, incomplete.

This invention is applicable to any form of rail, the heads of the high and low rails being adapted to conform to each other.

In the construction of the joint in accordance with this invention, a low rail formed with a head B, a flange A, an offset C, a web E and double flanged foot D may be employed, connected with a high girder rail, having a web F, head F' and top flange G conforming to the head B and flange A of the low rail, and a foot G' with bottom flanges.

The high and low rails are connected together as follows: H indicates splice bars formed with a head h and a foot h' , the heads of the splice bars bearing against the under side of the head B and flange A, and resting

on the bottom flanges, while the head of one of said splice bars bears against the under side of the head of the low rail, and their feet resting on the flanges of the foot D of said rail, as shown in Fig. 1.

In order to bring the ends of the high and low rails together, the splice bars H are cut away from one end, so as to form oblong slots I, in which are inserted the flanges of the foot of the low rail, the slots I being at such a distance from the tops of the splice bars H, as to bring the heads of the high and low rails into alignment. The head and the upper portion of the high rail is also cut away at one end, so as to bring the top of the remaining lower portion of the web at the end of said rail in alignment with the slots I in the splice bars H.

In order to afford a snug fit and bearing for the upper portion of the splice bar H, the side adjacent to the heads of the bolts, with the low rail, the head of said splice bar and a portion of its web is cut away from one end a distance equal to the slot I, and said cut away portion of the web is bent inward, so as to be brought beneath the offset C of the low rail and fit in place between the offset C and the flange beneath the foot of the low rail, as shown in Fig. 2. The end of the low rail being brought against the end of the high rail with the flanges of the former in the slots I, the splice bars H are bolted, as shown, to the high and low rails. A strong and compact rail joint will thus be afforded, the end of the low rail having a firm bearing and support on the cut away portion of the web of the high rail and on the splice bars.

If desired, instead of cutting away the head and the upper portion of the web at the end of the high rail, the latter may be left intact and a filling piece be employed to serve in place of the lower cut portion of the web at the end of the high rail. This construction is illustrated in Figs. 3 and 5, Sheet 1 of drawings, in which a block J is located between the splice bars H, as shown in Fig. 3 and in dotted lines in Fig. 5, and bolted to said splice bars, the top of the block J being on a level with the lower edges of the slots I, so as to afford with the latter a bearing for the low rail.

In Figs. 7 and 8 is shown another modifi-

cation, similar to that in Figs. 3 and 5, except that a filling piece K is employed, having flanges *k* at its top extending beneath and to the edges of the flanges D of the low rail, and a neck L at its lower end with flanges L' on which rest the feet *h'* of the splice bars H.

In the modification shown in Figs. 8 and 10, the construction and arrangement of the parts are similar to that shown in Figs. 1, 2, and 4. A piece, corresponding in size to those portions of the splice bars in Figs. 1, 2, and 4 above the slots I, is cut off of the splice bars H, leaving each splice bar of the shape shown in Fig. 11. There is then substituted for this removed portion of the splice bar H, bars having a head and foot conforming to the particular shape of the head and foot of the low rail, as for example in Figs. 8 and 9. Bars M may be employed with a head *m* and foot *m'*, as shown in Fig. 11, corresponding in size with those portions of the ends of the splice bars above the slots I in Figs. 1, 2, and 4.

The bars M are integrally united to those portions of the splice bars H marked N, preferably by electric welding. At the lower end of the portion N the splice bars H may be recessed as at *n* to limit the contact surface for welding, the recess *n* corresponding in size to the depth of the slots I formed after the bars M are welded to the splice bars H.

It will be observed that when bars M have been united to splice bars H the latter are substantially the splice bars with slots I shown in Figs. 1, 2, 4, only that the bars M have head and feet which conform to and fit against the under side of the particular shape of head and top flange and rest on the bottom flanges of the low rail, as shown in Fig. 8, the head of the bar M on the side adjacent to offset C not only bearing against the offset but underneath the head B.

Having described my invention, I claim—

1. The combination of two abutting rails, one a high and the other a low rail, the high rail having a portion of its head and web removed to form a seat for the low rail, the re-

maining portion of the high rail being such as to bring the heads of the rails in alignment, the two rails being secured together at the joint.

2. In a rail joint, a splice bar formed at one end with an open ended slot to receive a flange of a low rail in alignment with the top of a high rail.

3. A rail joint, consisting of the combination with a high rail, of a low rail, abutting the high rail, with their heads in alignment, a support for the low rail at the end of the high rail, and splice bars with open ended slots at one end in which are located the bottom flanges of the low rail, the rails and splice bars being bolted together.

4. A rail joint, consisting of the combination with a high rail having a portion of its head and the upper part of its web removed at one end, to form a rail seat, of a low rail with its abutting end resting on the rail seat of the high rail and its head in alignment with that of the latter, and splice bars with open ended longitudinal slots at one end in which are located the bottom flanges of the low rail, the splice bars and rails being bolted together.

5. In a rail joint, a splice bar having a portion of its head and web at one end formed of a bar welded to the splice bar and forming therewith an open ended longitudinal slot in one end of the splice bar.

6. The method of forming a splice bar with an open ended longitudinal slot at one end, as herein described, which consists in cutting away a portion of the head and web of the splice bar at one end and then integrally uniting a bar of a different configuration to the splice bar to complete the cut away portion of the splice bar and form an open ended longitudinal slot therein.

In testimony whereof I have affixed my signature in presence of two witnesses.

ARTHUR J. MOXHAM.

Witnesses:

A. J. BRYAN,
D. BRYAN.